

CLAIMS

1. A ratchet wrench having a housing in which a pair of annular hold portions having central spaces is formed while separated from each other, a shank included between the pair of annular hold portions and having a base portion and an engagement portion, and a spring for imparting friction to said shank,

the ratchet wrench characterized in that said spring and a guide member protecting the spring are held in said shank by hold means to form one shank assembly, drop-out of said shank assembly from the central space of the other of said annular hold portions to an outside is prevented by a wall of the other annular hold portion, and drop-out preventing means for preventing the drop-out of said shank assembly from the central space of one of said annular hold portions to the outside is attached to one of said annular hold portions.

2. A ratchet wrench according to claim 1, characterized in that an as-prepared material is used as the housing in which said pair of annular hold portions is formed, an annular recess portion is formed in an inner wall of said other annular hold portion, and an abrasion preventing member for obstructing contact between said shank and said other annular hold portion is placed in the annular recess portion.

3. A ratchet wrench according to claim 2, characterized in that said abrasion preventing member is formed in an annular shape in which a hole is made in the center, a projection is formed in said shank, and the projection is fitted in said hole of said abrasion preventing member.

4. A ratchet wrench according to claim 2, characterized in that rotation preventing means is placed between said abrasion preventing member and said other annular hold portion, and thereby said abrasion

preventing member is not rotated with respect to said other annular hold portion.

5. A ratchet wrench according to claim 1, characterized in that heat treatment is performed to the housing in which said pair of annular hold portions is formed, an annular recess portion is formed in the inner wall of said other annular hold portion, and said shank is fitted in the annular recess portion to bring said shank into direct contact with said other annular hold portion.

6. A ratchet wrench according to claim 1, characterized in that an annular groove is formed in an opposing surface facing the central space in one of said annular hold portions, and a snap ring fitted in said annular groove is used as said drop-out preventing means.

7. A ratchet wrench according to claim 1, characterized in that the rotation preventing means is placed between said guide member and an inner wall of one of said annular hold portions, and thereby said guide member is not rotated with respect to said other annular hold portion.

8. A ratchet wrench according to claim 1, characterized in that said guide member has an inner-side cylindrical portion, an outer-side cylindrical portion and an annular space portion therebetween, and said spring is accommodated in the annular space portion.

9. A ratchet wrench according to claim 1, characterized in that a washer is included between said shank and said guide member, and a washer is included between said spring and said hold means.

10. A ratchet wrench according to claim 1, characterized in that said spring is formed in an annular disc spring or a wave spring.

11. A ratchet wrench according to claim 1, characterized in that said hold means is configured so as not to be protruded to the outside from an

outer surface of any one of said annular hold portions.

12. In a ratchet wrench having a housing in which a pair of annular hold portions having central spaces is formed while separated from each other and a shank included between the pair of annular hold portions and having a base portion and an engagement portion,

a ratchet wrench assembly method characterized by including the steps of:

forming one shank assembly by holding a spring imparting friction to said shank and a guide member protecting the spring in said shank with hold means;

inserting said shank assembly from a central space of one of the annular hold portions toward the other annular hold portion;

obstructing drop-out of said shank assembly from the central space of the other annular hold portion by an inner wall of the other annular hold portion; and

attaching drop-out preventing means for preventing the drop-out of said shank assembly from the central space of one of said annular hold portions toward an opposite direction to the insertion direction of said shank assembly to one of said annular hold portions.

13. A ratchet wrench assembly method according to claim 12, characterized in that an as-prepared material is used as the housing in which said pair of annular hold portions is formed, an annular recess portion is formed in an inner wall of said other annular hold portion, an abrasion preventing member in which a hole is made in the center and for obstructing contact between said shank and said other annular hold portion is placed in the annular recess portion, a projection is formed in said shank, and the projection is fitted in said hole of said abrasion preventing member.

14. A ratchet wrench assembly method according to claim 13, characterized in that rotation preventing means is placed between said abrasion preventing member and said other annular hold portion, and thereby said abrasion preventing member is not rotated with respect to said other annular hold portion.

15. A ratchet wrench assembly method according to claim 12, characterized heat treatment is performed to the housing in which said pair of annular hold portions is formed, an annular recess portion is formed in the inner wall of said other annular hold portion, and said shank is fitted in the annular recess portion to bring said shank into direct contact with said other annular hold portion.

16. A ratchet wrench assembly method according to claim 12, characterized in that an annular groove is formed in an opposing surface facing the central space in one of said annular hold portions, and a snap ring fitted in said annular groove is used as said drop-out preventing means.

17. A ratchet wrench assembly method according to claim 12, characterized in that the rotation preventing means is placed between said guide member and an inner wall of one of said annular hold portions, and thereby said guide member is not rotated with respect to said other annular hold portion.

18. A ratchet wrench assembly method according to claim 12, characterized in that said guide member has an inner-side cylindrical portion, an outer-side cylindrical portion and an annular space portion therebetween, and said spring is accommodated in the annular space portion.

19. A ratchet wrench assembly method according to claim 12, characterized in that a washer is included between said shank and said guide member, and a washer is included between said spring and said hold means.

20. A ratchet wrench assembly method according to claim 12, characterized in that said spring is formed in an annular disc spring or a wave spring.

21. A ratchet wrench assembly method according to claim 12, characterized in that said hold means is configured so as not to be protruded to the outside from an outer surface of any one of said annular hold portions.